RULE 2202 - REGISTRATION FORM

SUPPLEMENTAL WORKSHEETS

&

TABLES

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SUPPLEMENTAL WORKSHEETS & TABLES

SUPPLEMENTAL WORKSHEETS
Tables & Maps

TABLE 1
Employee Emission Reduction Factors
(pounds per year per employee)

Performance Target Zone 1

Emission Year	VOC	NOx	CO
1997	8.40	6.17	64.23
1998	7.48	5.76	58.07
1999	6.55	5.24	51.51
2000	5.73	4.83	45.35
2001	5.22	4.42	42.27

Performance Target Zone 2

Emission Year	VOC	NOx	CO
1997	6.45	4.83	49.86
1998	5.84	4.42	45.14
1999	5.12	4.11	40.01
2000	4.40	3.80	35.19
2001	4.10	3.39	32.83

Performance Target Zone 3

Emission Year	VOC	NOx	CO
1997	4.51	3.29	34.58
1998	3.99	3.08	31.29
1999	3.58	2.88	27.70
2000	3.07	2.57	24.42
2001	2.87	2.36	22.78

TABLE 2
Emission Factors
for Vehicle Trip Emission Credit (VTEC)
(pounds per year per daily commute vehicle)

Emission Year	VOC	NOx	CO
1997	19	14	146
1998	17	13	132
1999	15	12	117
2000	13	11	103
2001	12	10	96

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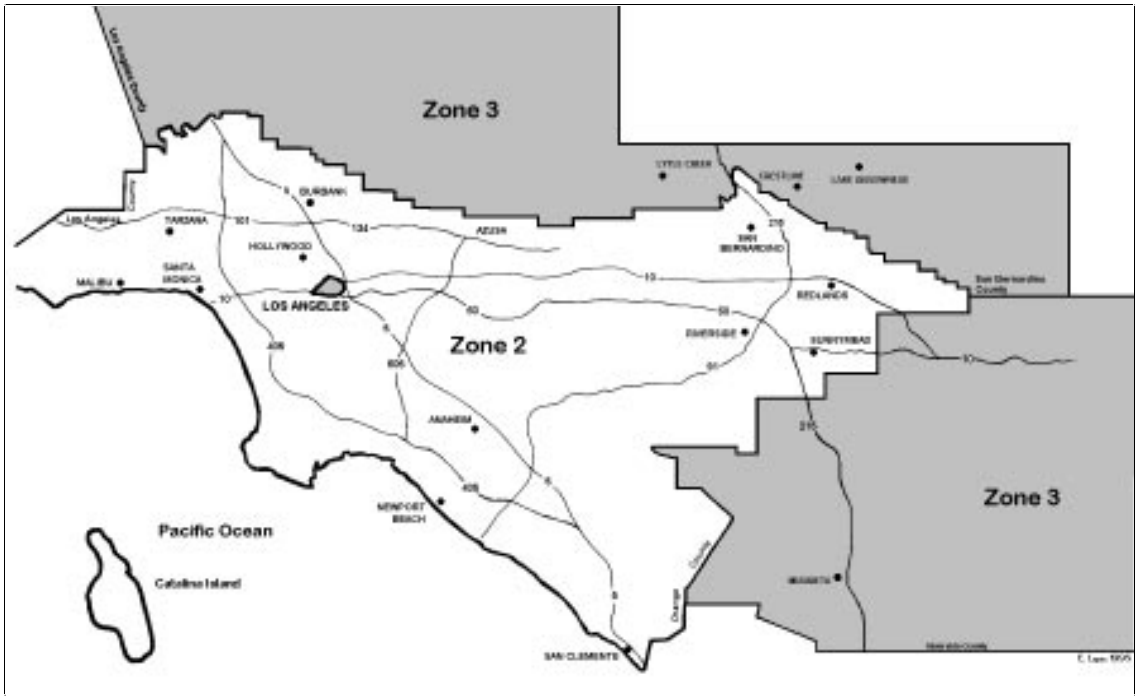
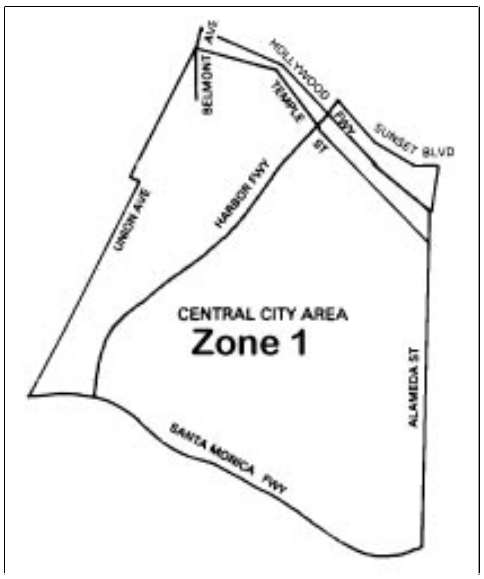
PERFORMANCE TARGET ZONES



- A worksite's Performance Target Zone depends on its location.
- **Zone 1** is the Central City Area of Downtown Los Angeles within the District's Source/Receptor Area 1.
- **Zone 2** corresponds to the District's Source/Receptor Areas 2 through 12, 16 through 23, and 32 through 35, excluding the Central City Area.
- **Zone 3** corresponds to the District's Source/Receptor Areas 13 through 15, 24 through 31, and 36 through 38.



SUPPLEMENTAL WORKSHEETS
Introduction

The purpose of the Supplemental Worksheets is to assist the preparer in determining their CCVR (Creditable Commute Vehicle Reduction) Credits or VTEC (Vehicle Trip Emission Credits).

The use of the Worksheets is optional and is not required to be submitted with the Registration form. However, the Worksheets and/or other supporting records must be kept at the worksite and be made available upon request to the AQMD or its representatives.

The employer may calculate their CCVR using the following:

1. First year of registration:
   a. AQMD approved survey;
   b. Weighted average of the most immediate past three years of AVR data using the current year employee numbers; or
   d. Other AQMD approved method.

2. Second year and beyond:
   a. AQMD approved survey;
   b. 1.1 AVR default using the current year employee numbers; or
   c. Other AQMD approved method.

Notes:
1. The AQMD approved survey can be found in the Employee Commuter Reduction Program guidelines and forms.
2. Other AQMD approved methods must be approved in writing prior to submittal of the Registration form.

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SUPPLEMENTAL WORKSHEETS
Weighted Average

The weighted average is determined by using the survey data of the most immediate past three years. Do not use the arithmetic average of AVR. The weighted average CCVR is determined as follows:

Step 1

Enter in the table below the survey data of the weekly employee trips from the last three years and add. Do the same for the weekly vehicle trips.

		Weekly employee trips (line W of form IV)		Weekly vehicle trips (line TV of form IV)
Year 1	W_1		TV_1	
Year 2	W_2		TV_2	
Year 3	W_3		TV_3	
Total	W_T		TV_T	

Step 2

Using the calculated totals from Step 1, divide the total of column W by the total of column TV.

W_T	
TV_T	
$W_T \div TV_T =$ $AVR_{Weighted}$	

The result is $AVR_{Weighted}$.
Continue on to Step 3.

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Step 3

Using the $AVR_{Weighted}$ calculated above divide that number into the current daily employee ($E_{Current}$). This will calculate the current daily vehicle trips ($TV_{Current}$).

$E_{Current}$	
$AVR_{Weighted}$	
$E_{Current} \div AVR_{Weighted} =$ $TV_{Current}$	

The current daily employee number ($E_{Current}$) may be established through payroll records in determining the number of employee reporting to work in the peak window. (This is analogous to the number found on line W of form IV of the Employee Commute Reduction Program survey.)

Step 4

Calculate the CCVR using the information from Step 3 by subtracting the current daily vehicle trips ($TV_{Current}$) from the current daily employee ($E_{Current}$).

$E_{Current}$	
$TV_{Current}$	
$E_{Current} - TV_{Current} =$ CCVR	

This is the CCVR based on the weighted average of three years data.

Step 5

Enter this number on line 3 of the Registration form.

SUPPLEMENTAL WORKSHEETS
Default AVR

Note: The Default AVR method can not be used for the first year registration.

Step 1

Determine the current daily employee number ($E_{Current}$). This is the number of employees reporting to work in the peak window. Enter this number in table below.

Step 2

Divide the current daily employee number ($E_{Current}$) by 1.1 and calculate the current daily vehicle trips ($TV_{Current}$).

$E_{Current}$	
$E_{Current} \div 1.1 = TV_{Current}$	

The current daily employee number ($E_{Current}$) may be established through payroll records in determining the number of employee reporting to work in the peak window. (This is equivalent to the number found on line W of form IV of the Employee Commute Reduction Program survey.)

Continue to Steps 3 and 4

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Step 3

Calculate the CCVR using the information from Step 2 by subtracting the current daily vehicle trips ($TV_{Current}$) from the current daily employee ($E_{Current}$).

$E_{Current}$	
$TV_{Current}$	
$E_{Current} - TV_{Current}$ = CCVR	

This is the CCVR based on the weighted average of three years data.

Step 4

Enter this number on line 3 of the Registration form.

SUPPLEMENTAL WORKSHEETS
Remote Sensing

To determine the VTEC from implementing a Remote Sensing program use the following format for each vehicle.

Pre-Repair Emission Rate	**(lb./mile)**		Results from pre-repair testing.
Post-Repair Emission Rate	**(lb./mile)**		Results from post-repair testing.
Difference			Subtract post-repair from pre-repair.
Miles Traveled			Enter the actual post-repair miles traveled until next scheduled Smog Check OR use the prorated default values.
Emission Reduction	**(lb.)**		Multiply the Miles Traveled times the Difference.

Note: 1. The default value is from Table IV-5 - Annual Mileage Accumulation as a Function of Vehicle Age (see page 27 of the Rule Implementation Guidelines). Note that the default values are annual mileage figures and need to be prorated accordingly for time periods other than one year.

2. All documentation relating to credits claimed for a remote sensing program must be submitted with the Registration form.

The total of the Emission Reductions from all the vehicles tested is entered on line 11 of the Registration form.

SUPPLEMENTAL WORKSHEETS
Alternative Fuel Vehicles

Employers may received VTEC for the use of alternative fuel vehicles (original equipment manufacturer (OEM) or ARB approved conversion) for commuter or other work-related trips.

This credit may be calculated using the method below or the emission factor data found in the Rule Implementation Guidelines.

NOTE: If the alternative fuel vehicle credit was used in an AQMD approved survey to calculate CCVR it can not be re-calculated with this worksheet (i.e., no double-counting of credits is allowed).

Step 1

a. For each vehicle fuel type determine:
   i. The total number of miles driven per year and
   ii. When the vehicle trips took place (peak or non-peak).

b. Emission Factors
   From the table below select the emission factor for the year the Registration is submitted.

Emission Factors
for Vehicle Trip Emission Credit (VTEC)
(pounds per year per daily commute vehicle)

Emission Year	VOC	NOx	CO
1995	22	15	175
1996	20	14	161
1997	19	14	146
1998	17	13	132

Continue to: Steps 2a (peak window) and 3
or
Steps 2b (non-peak window) and 3.

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Step 2 A

Peak Window Vehicle Trips:

1. Determine the number of miles driven for each alternative fuel vehicles in the peak window.
2. Divide the Miles per Year by 7,600 miles and enter that amount.
3. Multiply the Equivalent Vehicles times Fuel Adjustment times Emission Factor and enter the results in the Adjusted Credit column.
4. Repeat for each pollutant (VOC, NOx, and CO).

VOC

Vehicle Type	Miles per Year	Miles ÷ 7,600 = Equivalent Vehicles	Fuel Adjustment	Emission Factor	Adjusted Credit
Natural Gas (NG)			0.83		
Methanol (M)			0.80		
Propane (LPG)			0.80		
Zero-Emission Vehicles (ZEV)			1.0		
			Total VTEC		

NOx

Vehicle Type	Miles per Year	Miles ÷ 7,600 = Equivalent Vehicles	Fuel Adjustment	Emission Factor	Adjusted Credit
Natural Gas (NG)			0.83		
Methanol (M)			0.80		
Propane (LPG)			0.80		
Zero-Emission Vehicles (ZEV)			1.0		
			Total VTEC		

CO

Vehicle Type	Miles per Year	Miles ÷ 7,600 = Equivalent Vehicles	Fuel Adjustment	Emission Factor	Adjusted Credit
Natural Gas (NG)			0.83		
Methanol (M)			0.80		
Propane (LPG)			0.80		
Zero-Emission Vehicles (ZEV)			1.0		
			Total VTEC		

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Step 2 B

NON-Peak Window Vehicle Trips:

1. Determine the number of miles driven for each alternative fuel vehicles in the non-peak window.
2. Divide the Miles per Year by 7,600 miles and enter that amount.
3. Multiply the Equivalent Vehicles times Fuel Adjustment times Emission Factor and enter the results in the Adjusted Credit column.
4. Repeat for each pollutant (VOC, NOx, and CO).

VOC

Vehicle Type	Miles per Year	Miles ÷ 7,600 = Equivalent Vehicles	Fuel Adjustment	Emission Factor	Adjusted Credit
Natural Gas (NG)			0.83		
Methanol (M)			0.80		
Propane (LPG)			0.80		
Zero-Emission Vehicles (ZEV)			1.0		
			Total		
			Non-Peak Window Conversion Factor (CF)		1.15
			Total ÷ CF = VTEC		

NOx

Vehicle Type	Miles per Year	Miles ÷ 7,600 = Equivalent Vehicles	Fuel Adjustment	Emission Factor	Adjusted Credit
Natural Gas (NG)			0.83		
Methanol (M)			0.80		
Propane (LPG)			0.80		
Zero-Emission Vehicles (ZEV)			1.0		
			Total		
			Non-Peak Window Conversion Factor (CF)		1.15
			Total ÷ CF = VTEC		

CO

Vehicle Type	Miles per Year	Miles ÷ 7,600 = Equivalent Vehicles	Fuel Adjustment	Emission Factor	Adjusted Credit
Natural Gas (NG)			0.83		
Methanol (M)			0.80		
Propane (LPG)			0.80		
Zero-Emission Vehicles (ZEV)			1.0		
			Total		
			Non-Peak Window Conversion Factor (CF)		1.15
			Total ÷ CF = VTEC		

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Step 3

Add the VTEC for each pollutant from peak window and non-peak window.

VTEC	VOC	NOx	CO
Peak Window			
Non-Peak Window			
Total			

Enter the results on line 11 of the Registration form.